

Claims 1, 3, 9, 11, and 17 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,890,118 (Kagoshima, et al.). Reconsideration and withdrawal of this rejection is respectfully requested in view of the following remarks.

Independent Claim 1 is directed to a speech synthesis apparatus for performing speech synthesis by using pitch marks. The apparatus comprises a first calculation means for calculating a distance between the first two pitch marks of a voiced portion of speech data to be processed, second calculation means for calculating the difference between adjacent inter-pitch-mark distances, and management means for storing the calculation results obtained by the first and second calculation means in a file and managing the results. By this arrangement, the size of the file used to manage pitch marks of speech may be reduced.

Independent Claims 9 and 17 relate to a control method and a computer-readable memory, respectively, and correspond generally to Claim 1.

The cited reference, Kagoshima, et al., discloses a speech synthesis apparatus that is designed to produce synthetic speech. The speech synthesis apparatus includes a memory for storing a plurality of typical waveforms corresponding to a plurality of frames, a voiced speech source generator, an unvoiced speech source generator, and a vocal tract filter. The voiced speech source generator includes an interpolation circuit for performing interpolation between the typical waveforms read from the memory to obtain a plurality of interpolation signals each having at least one interpolation pitch period and a signal level which changes smoothly between the corresponding frames. The voiced speech source generator also includes a superposing circuit for superposing the interpolation signals obtained by the interpolation circuit to form a voiced speech source signal.

However, this reference fails to disclose or suggest the above-mentioned features of the present invention. In particular, Kagoshima, et al. fails to disclose or suggest, inter alia, a first calculation means for calculating a distance between the first two pitch marks of a voiced portion of speech data to be processed and a second calculation means for calculating the difference between adjacent inter-pitch-mark distances, as disclosed and claimed in the present application.

As understood, Kagoshima, et al. merely discloses performing pitch-interpolation between a first pitch period and a second pitch period (see column 6, line 62 through column 7, line 7) but does not disclose calculating the specific distances between pitch marks.

Moreover, the Kagoshima, et al. reference does not disclose performing a calculation of the difference between inter-pitch-mark distances, as recited in Claim 1. The speech synthesis apparatus in Kagoshima, et al. discloses calculating the distance between interpolation positions using equation (12) and calculating interpolation positions using equation (13). However, there is no mention of a process for determining the difference between adjacent inter-pitch-mark distances.

For the above reasons, Applicants submit that independent Claims 1, 9, and 17 are allowable over the cited art. The dependent claims depend from one or another of the independent claims and are believed allowable for the same reasons. Moreover, each of these dependent claims recite additional features in combination with the features of their respective independent claims and is believed allowable in its own right. Individual consideration of the dependent claims respectfully is requested.

Applicants believe that the present Response to Final Official Action is responsive to each of the points raised by the Examiner in the Official Action and submit that the application is in condition for allowance. Favorable consideration of the claims and early passage to issue of the present application earnestly are solicited.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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